

## CLAIMS

1. A solvent free solidified matrix comprising a mixture of:
  - i) at least one polymer, wherein said polymer is selected from the group consisting of poly(L-lactic acid), poly(D,L-lactic acid-co-glycolic acid (PLGA)), poly(methyl methacrylate) and polystyrene; and
  - ii) at least one inorganic compound wherein said inorganic compound is selected from the group consisting of hydroxyapatite, calcium phosphate and glass powder;wherein said matrix has a porosity of greater than approximately 80%.
2. The solvent free solidified matrix of Claim 1, wherein said porosity is greater than approximately 85%.
3. The solvent free solidified matrix of Claim 1, wherein said porosity is greater than approximately 90%.
4. The solvent free solidified matrix of Claim 1, wherein said porosity is greater than approximately 95%.
5. The solvent free solidified matrix of Claim 1, further comprising a simulated body fluid contacting said matrix.
6. A composition comprising a) a three dimensional structure formed by a matrix and b) a simulated body fluid contacting said structure, wherein said matrix comprises a mixture of
  - i) at least one inorganic polymer wherein said polymer is selected from the group consisting of poly(L-lactic acid), poly(D,L-lactic acid-co-glycolic acid (PLGA)), poly(methyl methacrylate) and polystyrene;
  - ii) at least one inorganic compound wherein said inorganic compound is selected from the group consisting of hydroxyapatite, calcium phosphate and glass powder;wherein said matrix has a porosity of greater than approximately 80%.
7. The composition of Claim 6, further comprising c) one or more living cells contacting said matrix.
8. The composition of Claim 6, wherein said one or more cells are selected from the group consisting of osteoblasts, fibroblasts, and epithelial.
9. The composition of Claim 6, wherein said porosity is greater than approximately 85%.

10. The composition of Claim 6, wherein said porosity is greater than approximately 90%.
11. The composition of Claim 6, wherein said porosity is greater than approximately 95%.
12. The composition of Claim 6, wherein said matrix is biodegradable.